



CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005



Job No.: CTCE/BBMP/W.No.11/KAK/WMM/Gradation/2015-16

04.03.2016



GRADATION FOR WMM MORTH TABLE-400-11

Client : Asst. Executive Engineer, Vidyananyapura Sub Division, BBMP, Bangalore.

Agency : Mr. K. Anil Kumar,
84-L, 2nd Floor, 3rd Cross, 4th Main, HAL 3rd Stage, Bangalore - 75.

Name of Work : Filling of pot holes in Ward No. 11 (Kuvempunagara), Vidyananyapura Sub Division, BBMP, Bangalore.

Reference : EE/BTP/BBMP/E-PMT/238/2015-16 Dated: 26.02.2016

Date of Testing : 04.03.2016

Material : WMM

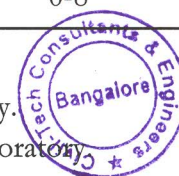
Sample Location : WMM Mix Plant

Oven Dry Wt (gm): 9825

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	375	375	3.8	96.2	95-100
22.4	3285	3660	37.3	62.7	60-80
11.2	1940	5600	57.0	43.0	40-60
4.75	1565	7165	72.9	27.1	25-40
2.36	850	8015	81.6	18.4	15-30
0.600	715	8730	88.9	11.1	8-22
0.075	520	9250	94.1	5.9	0-8

Note:

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4th Block, Shakthiganapathinagara,
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04.03.2016

Aggregate Impact Value

IS: 2386 Part IV

Client	Asst. Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	Mr. K. Anil Kumar, # 84-L, 2nd Floor, 3rd Cross, 4th Main, HAL 3rd Stage, Bangalore - 75.
Name of the Work	Filling of pot holes in Ward No. 11 (Kuvempunagara), Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-PMT/238/2015-16 Dated: 26.02.2016
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	04.03.2016



Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	387	22.41
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	85	88	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	299	
4	Aggregate Impact value = percent fines	22.08	22.74	
	$100 * (W_2 / W_1) \%$			22.41

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Handwritten signature

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04.03.2016

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	Asst. Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	Mr. K. Anil Kumar, # 84-L, 2nd Floor, 3rd Cross, 4th Main, HAL 3rd Stage, Bangalore - 75.
Name of Work	Filling of pot holes in Ward No. 11 (Kuvempunagara), Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-PMT/238/2015-16 Dated: 26.02.2016
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	04.03.2016



Result : Flakiness Index = 11.32%

Elongation Index = 13.48%

Result : Combined Flakiness & Elongation index 24.80%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.11/KAK/CSR-03/1095b/QB/2015-16

14.03.2016

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

*CUSTOMER	:	Asst. Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
*AGENCY	:	Mr. K. Anil Kumar, # 84-L, 2 nd Floor, 3 rd Cross, 4 th Main, HAL 3 rd Stage, Bangalore - 75.
*NAME OF THE WORK	:	Filling of pot holes in Ward No. 11 (Kuvempunagara), Vidyaranyapura Sub Division, BBMP, Bangalore.
REFERENCE	:	EE/BTP/BBMP/E-PMT/238/2015-16 Dated: 26.02.2016
SAMPLE ID	:	Bitumen – Sample 1
SAMPLE RECEIVED ON	:	12.03.2016
DATE OF TESTING	:	12.03.2016 to 14.03.2016

AE-19
Q18
The results of the tests conducted on the bitumen sample.

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 °C, 1/10 mm	IS :1203 -1978 (RA-2009)	62	60 to 70
2	Softening point, °C	IS :1205 -1978 (RA-2009)	47	Min. 45
3	Ductility at 27°C, cm	IS :1208 -1978 (RA-2009)	100 >	Min. 50
4	Flash Point, °C	IS :1209 -1978 (RA-2009)	282	Min. 220

*Information is furnished by the Customer/Representative

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[Signature]

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VISHWANATH. I.A.
Chief Executive Officer

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16.03.2016

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CLIENT	Asst. Executive Engineer, Vidyanarayapura Sub Division, BBMP, Bangalore.
AGENCY	Mr. K. Anil Kumar, # 84-L, 2nd Floor, 3rd Cross, 4th Main, HAL 3rd Stage, Bangalore - 75.
NAME OF THE WORK	Filling of pot holes in Ward No. 11 (Kuvempunagara), Vidyanarayapura Sub Division, BBMP, Bangalore.
REFERENCE	EE/BTP/BBMP/E-PMT/238/2015-16 Dated: 26.02.2016
SAMPLE I/D	Pot holes filling to Roads in Ward No. 11
DATE OF TESTING	16.03.2016



BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	473.5	473.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26.5	26.50
7. Bitumen content in %	5.30	5.30
8. Average	5.30	

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16.03.2016

BITUMEN CONTENT AFTER GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As Per IS 2386 and IRC:SP:11-1984

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AGENCY	Mr. K. Anil Kumar, # 84-L, 2nd Floor, 3rd Cross, 4th Main, HAL 3rd Stage, Bangalore - 75.
NAME OF THE WORK	Filling of pot holes in Ward No. 11 (Kuvempunagara), Vidyaranyapura Sub Division, BBMP, Bangalore.
REFERENCE	EE/BTP/BBMP/E-PMT/238/2015-16 Dated: 26.02.2016
SAMPLE I/D	Pot holes filling to Roads in Ward No. 11
DATE OF TESTING	16.03.2016



GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	45.63	9.64	9.64	90.36	79-100
9.5	37.42	7.90	17.54	82.46	70-88
4.75	62.58	13.22	30.76	69.24	53-71
2.36	64.23	13.56	44.32	55.68	42-58
1.18	55.69	11.76	56.08	43.92	34-48
0.6	59.43	12.55	68.63	31.37	26-38
0.3	43.26	9.14	77.77	22.23	18-28
0.15	32.65	6.90	84.67	15.33	12-20
0.075	40.63	8.58	93.25	6.75	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	35.47	7.49	7.49	92.51	79-100
9.5	45.69	9.65	17.14	82.86	70-88
4.75	72.51	15.31	32.45	67.55	53-71
2.36	66.43	14.03	46.48	53.52	42-58
1.18	69.63	14.71	61.19	38.81	34-48
0.6	43.58	9.20	70.39	29.61	26-38
0.3	39.87	8.42	78.81	21.19	18-28
0.15	32.45	6.85	85.67	14.33	12-20
0.075	38.47	8.12	93.79	6.21	4-10

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